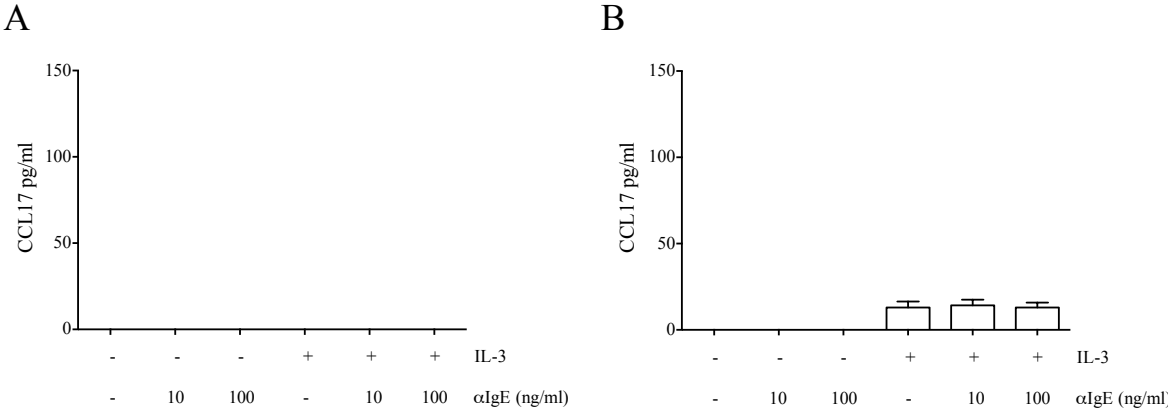
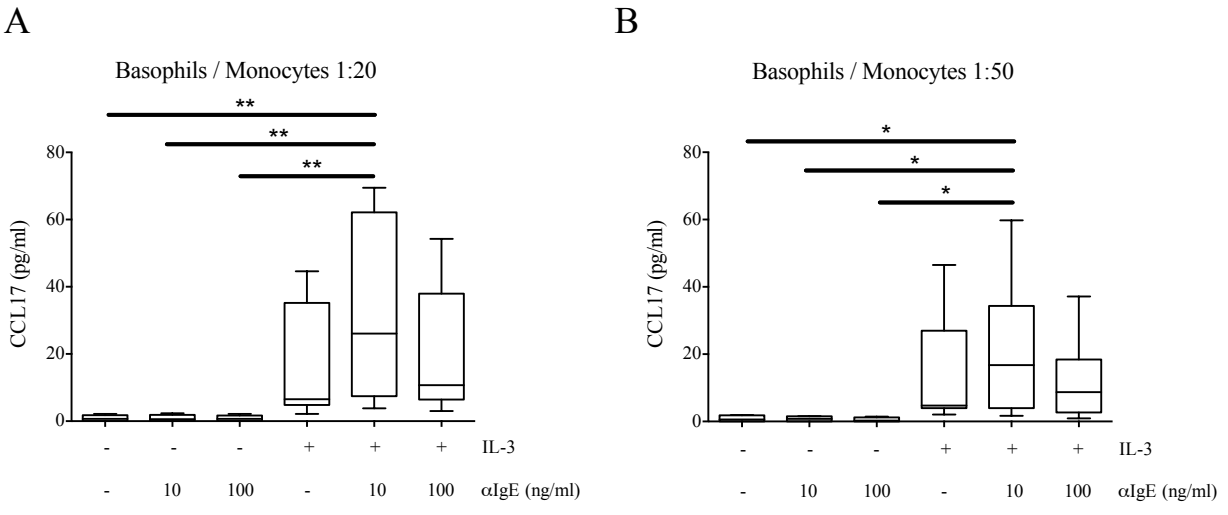
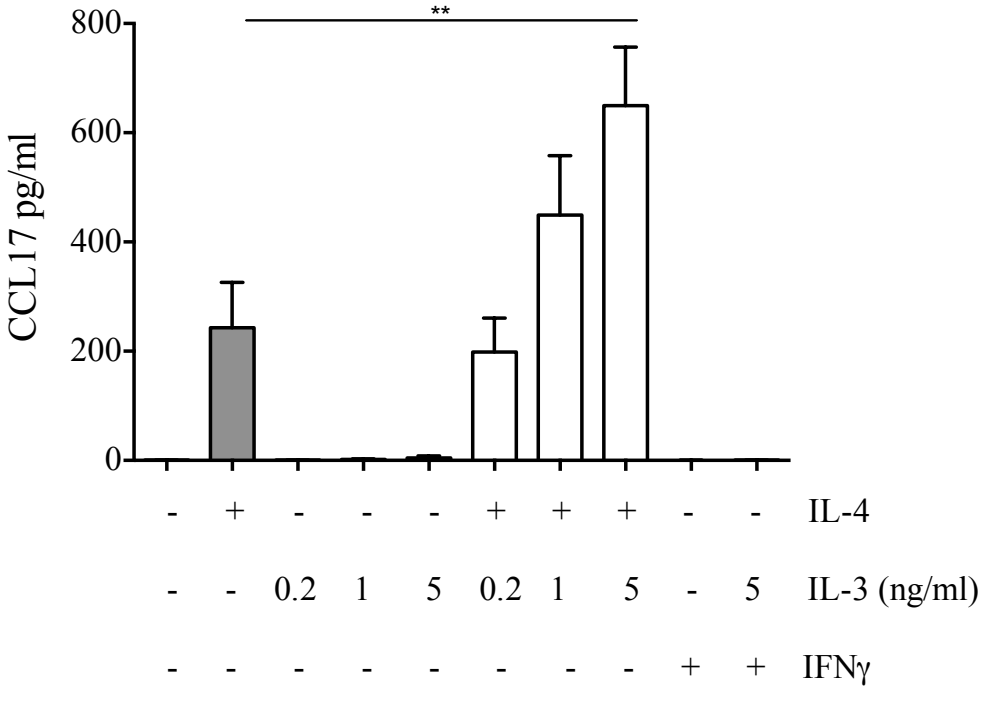


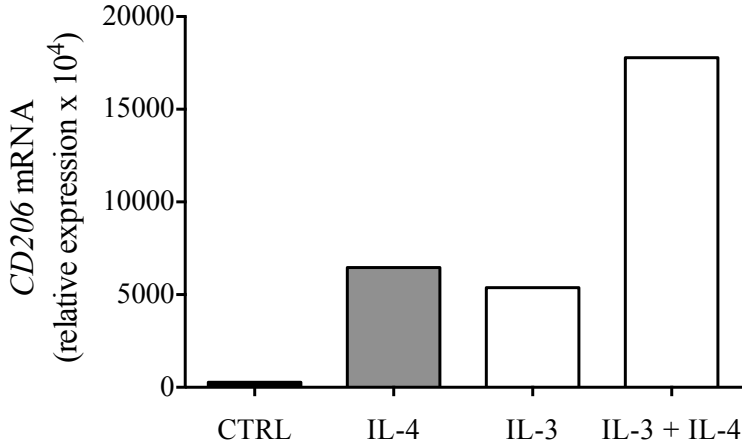
Supporting Information Figure 1. CCL17 production by basophils and monocytes. Basophils (A) and monocytes (B) were stimulated with αIgE (10 or 100 ng/ml) and IL-3 (5 ng/ml) for 24 hours. CCL17 levels were measured by ELISA in cell-free supernatants. Data are shown as mean + SEM of 2 (A) or 4 (B) independent experiments.



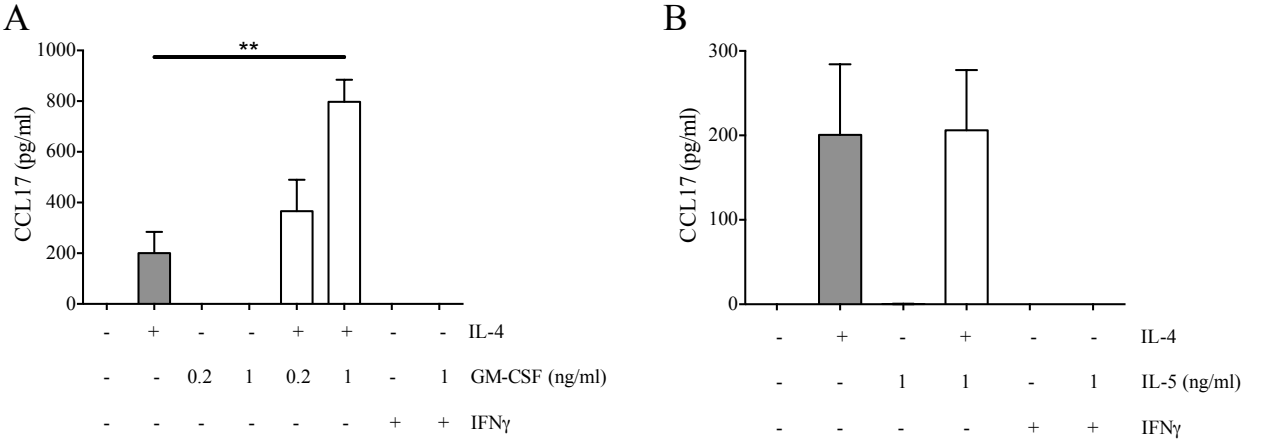
Supporting Information Figure 2. CCL17 production in basophil-monocyte co-cultures. Basophils and monocytes were co-cultured at a 1:20 (A) or 1:50 (B) ratio with αIgE (10 or 100 ng/ml) and IL-3 (5 ng/ml) for 24 hours. CCL17 levels were measured by ELISA in cell-free supernatants. Data are shown as the median, the 25th and 75th percentiles (boxes) and the 5th and 95th percentiles (whiskers) of 6 independent experiments. * $p < 0.05$, ** $p < 0.01$ determined by repeated measure one-way ANOVA with Tukey's post hoc test.



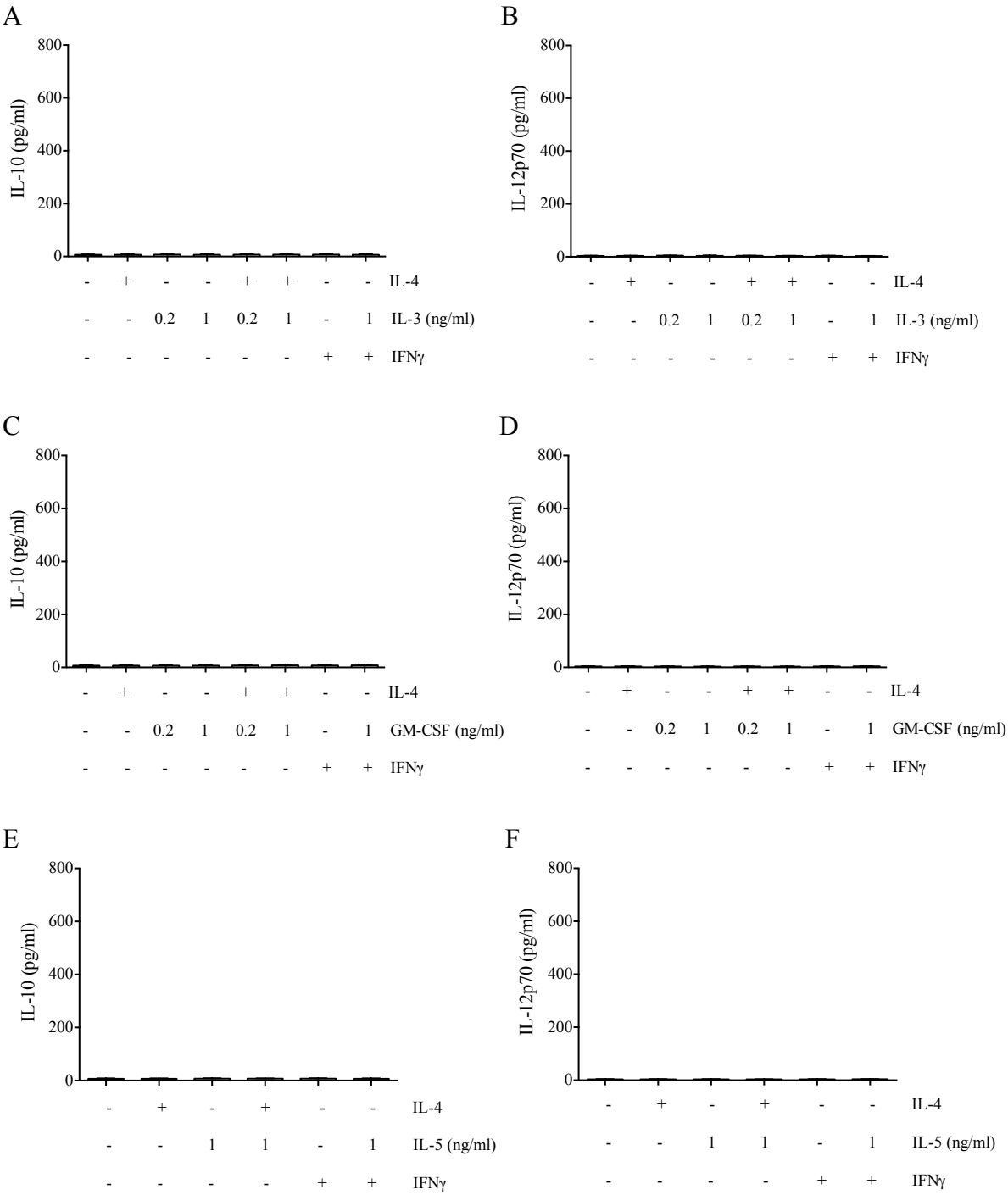
Supporting Information Figure 3. CCL17 production by monocyte-derived macrophages (MDM). MDM were stimulated with IL-4 (10 ng/ml), IFNγ (100 U/ml) and IL-3 (0.2, 1 or 5 ng/ml) for 24 hours. CCL17 levels were measured by ELISA in cell-free supernatants. Data are shown as mean + SEM of 4 independent experiments. ** $p < 0.01$ determined by repeated measure one-way ANOVA with Sidak's post hoc test.



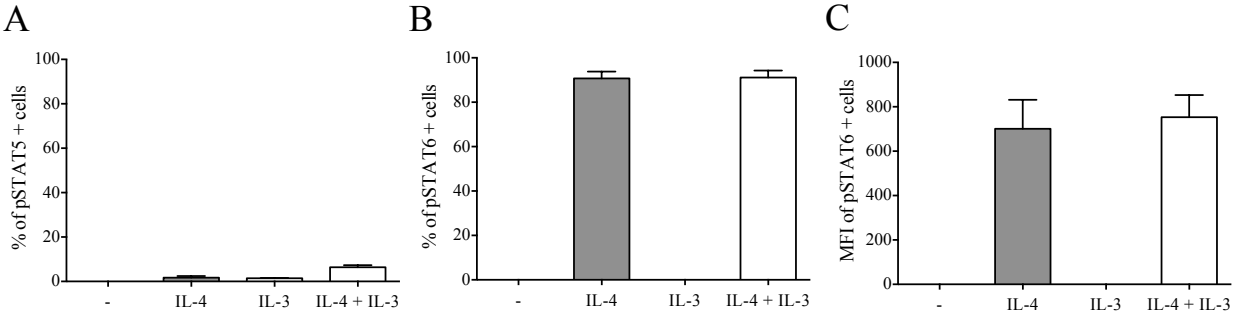
Supporting Information Figure 4. Monocyte expression of *CD206* mRNA. Monocytes were stimulated with IL-4 (10 ng/ml), IL-3 (1 ng/ml) and a combination of both. *CD206* mRNA levels are expressed as relative expression (normalized to GAPDH) x 10^4. Data are representative of two independent experiments.



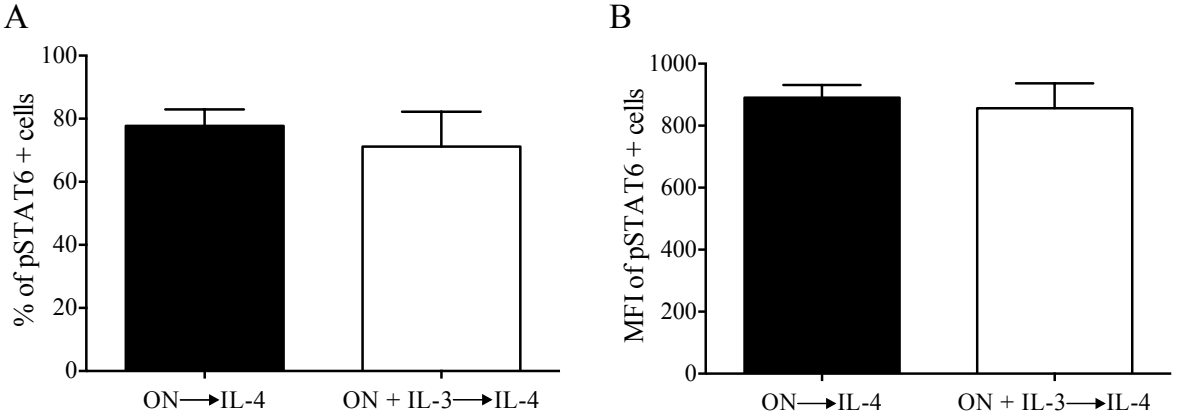
Supporting Information Figure 5. CCL17 production by monocytes. Monocytes were stimulated with IL-4 (10 ng/ml), IFNγ (100 U/ml), and GM-CSF (0.2 or 1 ng/ml) (A) or IL-5 (1 ng/ml) (B) for 24 hours. CCL17 levels were measured by ELISA in cell-free supernatants. Data are shown as mean + SEM of 4 independent experiments. ** $p < 0.01$ determined by repeated measure one-way ANOVA with Tukey's post hoc test.



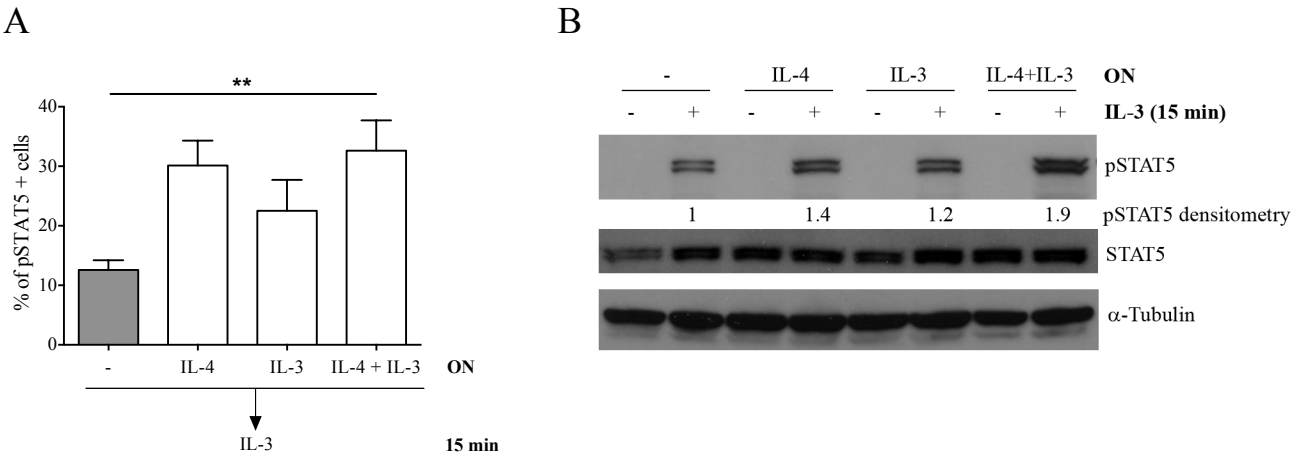
Supporting Information Figure 6. IL-10 and IL-12p70 production by monocytes. Monocytes were stimulated with IL-4 (10 ng/ml), IFNγ (100 U/ml), and IL-3 (0.2 or 1 ng/ml) (A, B), GM-CSF (0.2 or 1 ng/ml) (C, D) or IL-5 (1 ng/ml) (E, F) for 24 hours. CCL17 levels were measured by ELISA in cell-free supernatants. Data are shown as mean + SEM of 2 independent experiments.



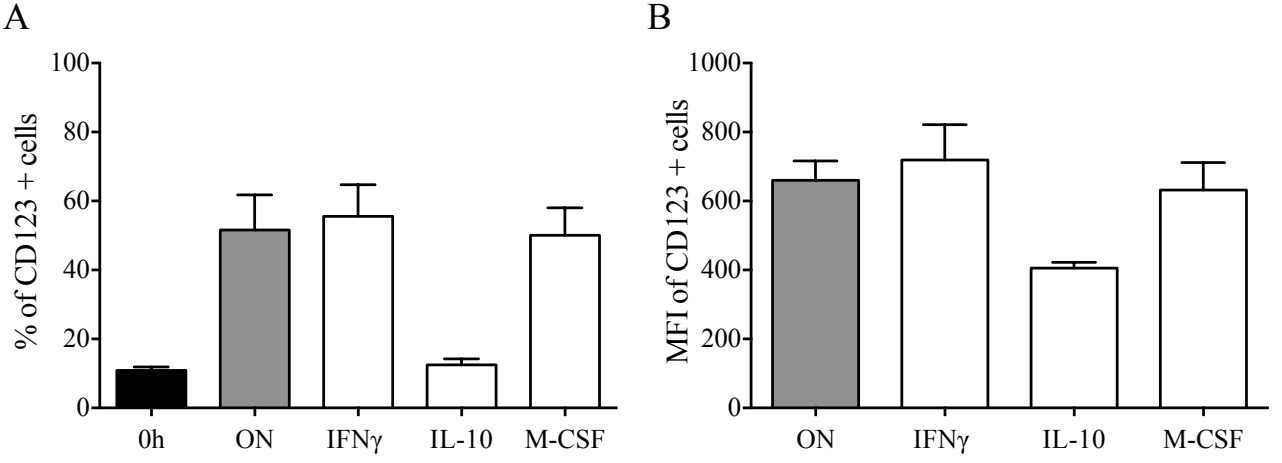
Supporting Information Figure 7. STAT5 and STAT6 phosphorylation in response to IL-3 and IL-4. Monocytes were stimulated with IL-4 (10 ng/ml) and/or IL-3 (1 ng/ml). STAT5 and STAT6 phosphorylation was assessed by flow cytometry. Results are expressed as percentage of pSTAT5 positive cells (A), percentage (B) and MFI (C) of pSTAT6 positive cells. Data are shown as mean + SEM of 4 independent experiments.



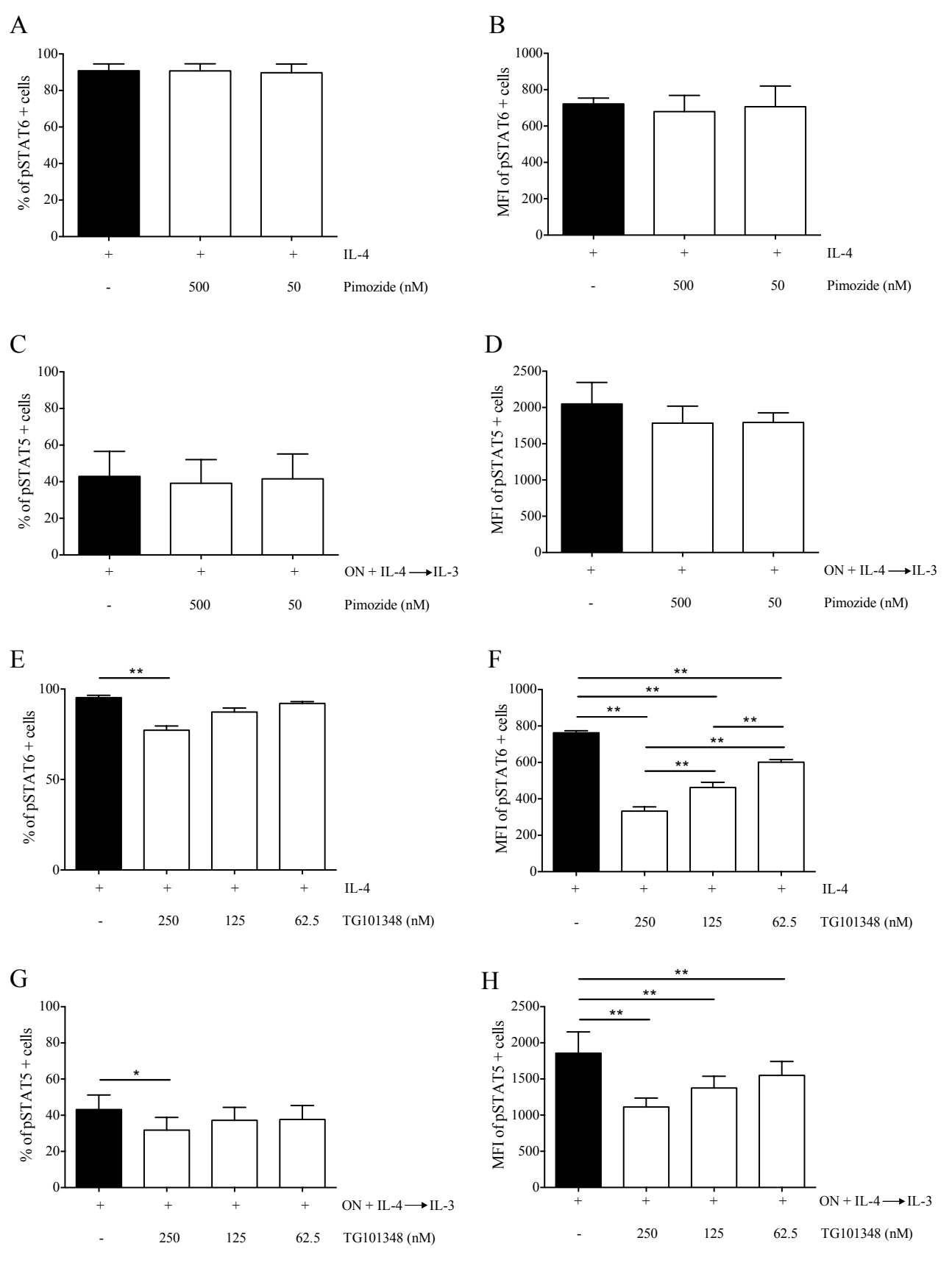
Supporting Information Figure 8. Monocytes were cultured overnight with (ON + IL-3) or without (ON) IL-3 (1 ng/ml). Then, monocytes were stimulated with IL-4 (10 ng/ml). STAT6 phosphorylation was assessed by flow cytometry. Results are expressed as percentage (A) and MFI (B) of pSTAT6 positive cells. Data are shown as mean + SEM of 4 independent experiments.



Supporting Information Figure 9. Modulation of IL-3-induced STAT5 phosphorylation. Monocytes were cultured overnight with IL-4 (10 ng/ml), IL-3 (1 ng/ml) or a combination of both. Then, monocytes were stimulated with IL-3 (1 ng/ml). STAT5 phosphorylation was assessed by flow cytometry (A) and western blot (B). Results are expressed as percentage of pSTAT5 positive cells (A) or relative optical densities of pSTAT5 bands normalized to STAT5 bands (B). (A) Data are shown as mean + SEM of 6 independent experiments. (B) Data are representative of 3 independent experiments. ** $p < 0.01$ determined by Friedman test with Dunn's post hoc test.



Supporting Information Figure 10. Monocytes were cultured overnight without (ON) or with IFNγ (100 U/ml), IL-10 (10 ng/ml) or M-CSF (50 ng/ml). CD123 expression was assessed by flow cytometry on cultured and on freshly isolated (0h) monocytes. Results are expressed as percentage (A) and MFI (B) of CD123 positive cells. Data are shown as mean + SEM of 4 independent experiments.


A
% of pSTAT6 + cells
100
80
60
40
20
0
+ + + IL-4
- 500 50 Pimozide (nM)
B
MFI of pSTAT6 + cells
1000
800
600
400
200
0
+ + + IL-4
- 500 50 Pimozide (nM)
C
% of pSTAT5 + cells
100
80
60
40
20
0
+ + + ON + IL-4 → IL-3
- 500 50 Pimozide (nM)
D
MFI of pSTAT5 + cells
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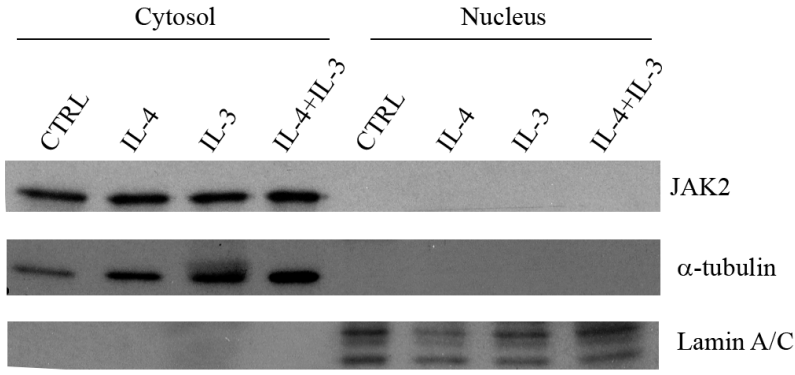
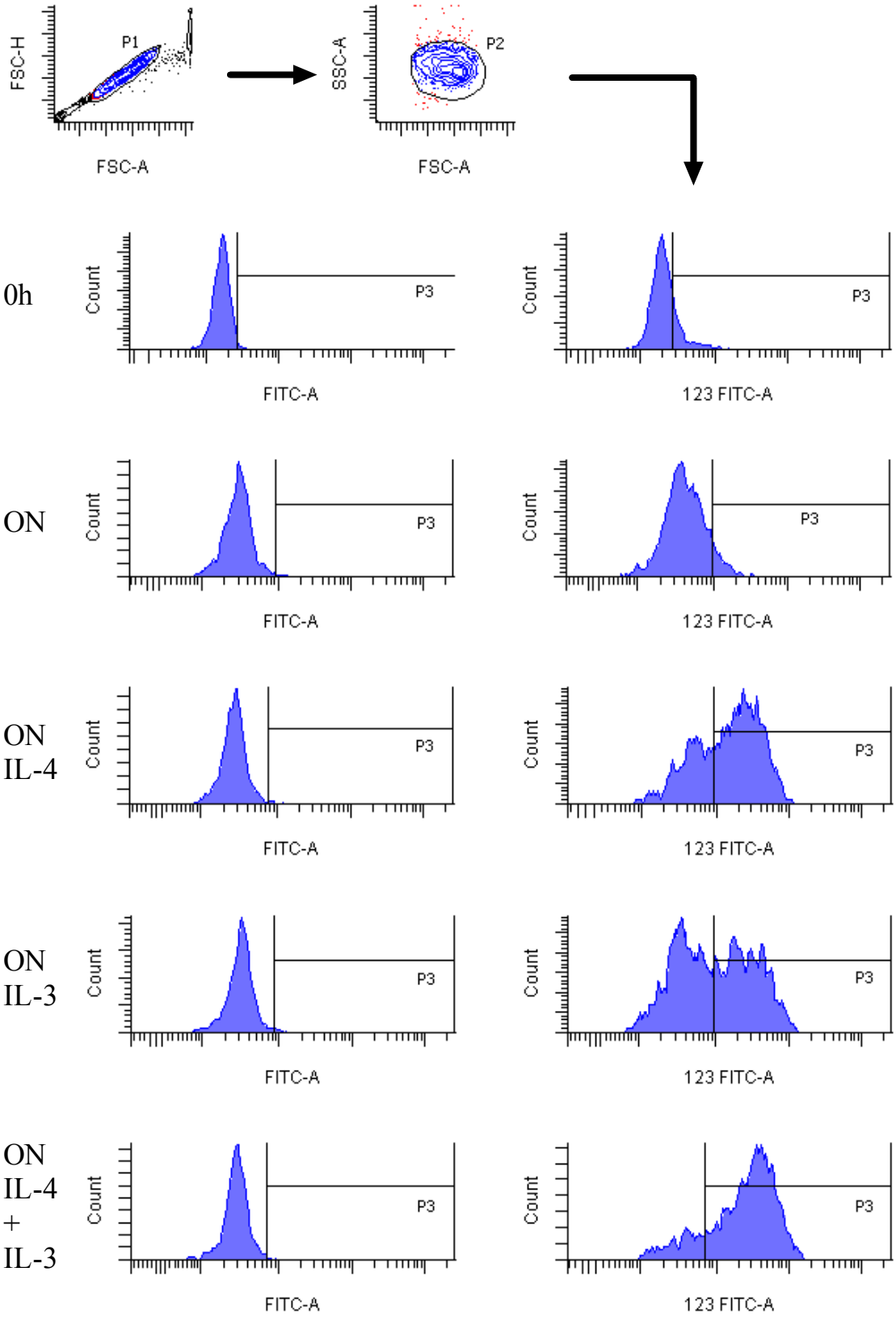
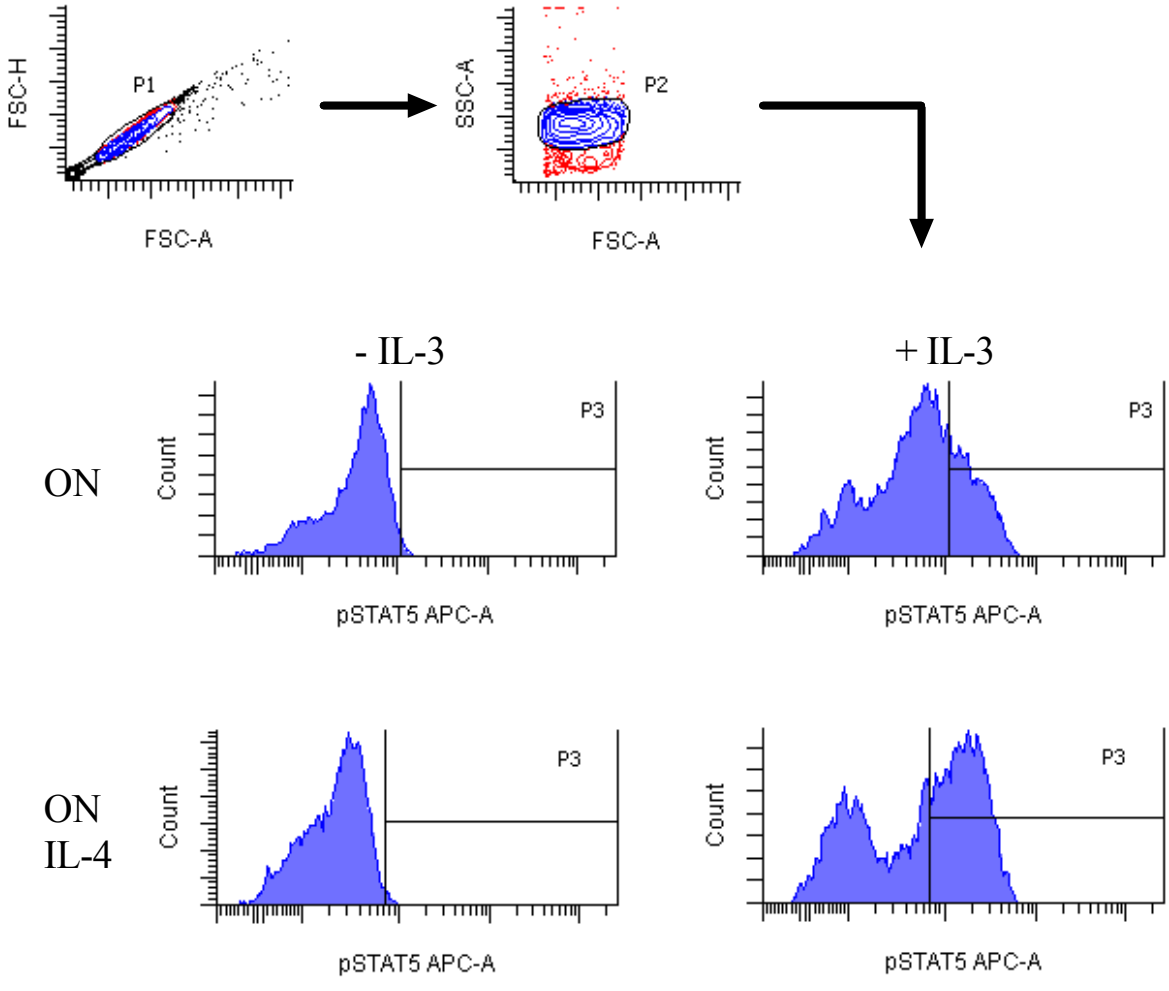
Supporting Information Figure 11. Modulation of STAT6 and STAT5 phosphorylation by pimozide and TG101348. (A, B, E, F) Monocytes were preincubated with or without pimozide (500 or 50 nM) (A, B) or TG101348 (250, 125 or 62.5 nM) (E, F) and then stimulated with IL-4 (10 ng/ml). Phosphorylation of STAT6 was assessed by flow cytometry. Results are expressed as percentage (A, E) and MFI (B, F) of pSTAT6 positive cells (mean ± SEM, n = 4). (C, D, G, H) Monocytes were cultured overnight with IL-4 (10 ng/ml) (ON + IL-4). Then, monocytes were preincubated with or without pimozide (500 or 50 nM) (C, D) or TG101348 (250, 125 or 62.5 nM) (G, H) and stimulated with IL-3 (1 ng/ml). Phosphorylation of STAT5 was assessed by flow cytometry. Results are expressed as percentage (C, G) and MFI (D, H) of pSTAT5 positive cells. Data are shown as mean + SEM of 6 independent experiments. * $p < 0.05$, ** $p < 0.01$ determined by repeated measure one-way ANOVA with Tukey's post hoc test (B, D, F, H) and Friedman test with Dunn's post hoc test (A, C, E, G).



Supporting Information Figure 12. JAK2 compartimentalization in human monocytes. JAK2 expression was assessed by Western blot in cytoplasmic and nuclear extracts of monocytes stimulated overnight with IL-4, IL-3 or a combination of both. Data are representative of two independent experiments.



Supporting Information Figure 13. A representative gating strategy for surface staining. Doublets were excluded based on forward scatter impulse area vs height (P1) and cells were gated based on forward and side scatter properties (P2). Histogram markers (P3) were set so that only 1% of cells in non-stained controls could be identified as positive. Left panels, non-stained controls. Right panels, samples stained with anti-CD123-FITC.



Supporting Information Figure 14. A representative gating strategy for phosphoprotein staining. Both non-stimulated (- IL-3) and stimulated (+ IL-3) cells were stained for pSTAT5. Doublets were excluded based on forward scatter impulse area vs height (P1) and cells were gated based on forward and side scatter properties (P2). Histogram markers (P3) were set so that only 1% of cells in non-stimulated controls could be identified as positive.

Table 1

	Controls	**Patients**
No.	6	6
Sex (male/female)	3/3	3/3
Age (years)	54 (49-57)	46 (38-57)
BMI (kg/m^2)	27.25 (27-28.625)	28.1 (25.9-28.5)
Frequency of daytime symptoms/week	0/7	5 (4-6)/7
Frequency of nighttime symptoms/week	0/7	2 (2-2)/7
FEV_1 (% of predicted)	97 (91.25-104)	68.45 (62.38-78.73) *
FEV_1/FVC (% of predicted)	84 (80-87.25)	75 (72.65-76.75) *
Allergen sensitization (skin prick test)	No	Yes
Eosinophil blood count (No. cells/mm^3)	155 (105-212.5)	430 (200-675)
Serum IgE levels (IU/ml)	23 (12-55)	190.5 (170.75-220) *

Data are expressed as median values (interquartile ranges). Data were analysed by using Wilcoxon matched-pairs signed rank test. * $p < 0.05$